

GLUCOCORTICOID AXIS IN PATIENTS WITH PRIMARY ALDOSTERONISM



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OBJECTIVES

To assess glucocorticoid axis in patients with primary aldosteronism as compared to patients with ACTH-independent Cushing syndrome and control hypertensive patients without gluco or mineralocorticoid excess.

BACKGROUND

Primary aldosteronism is associated with increased prevalence of cardiometabolic complications¹. The mechanisms are not fully elucidated, but an association with autonomous cortisol secretion could increase vascular and metabolic risk².

METHODS

- 22 patients with primary aldosteronism - PA (10M/12F, aged 43.9±11.2 years) (14 adrenal tumors, 8 uni/bilateral adrenal hyperplasia) – group 1
- 13 patients with ACTH-independent Cushing syndrome (2M/11F, aged 43.8±13.3 years) – group 2
- 42 control hypertensive patients Ctrl (16M/26F, aged 35.8±14.5 years) – group 0 - were retrospectively reviewed.
- Plasma aldosterone and plasma direct renin: *chemiluminescence* (methods's sensitivity 2.2 ng/dl for aldosterone and 0.27 ng/dl for renin, respectively);
- Serum cortisol and ACTH: *electrochemiluminescence*.

RESULTS

Figure 1. Serum midnight (11 p.m.) cortisol levels

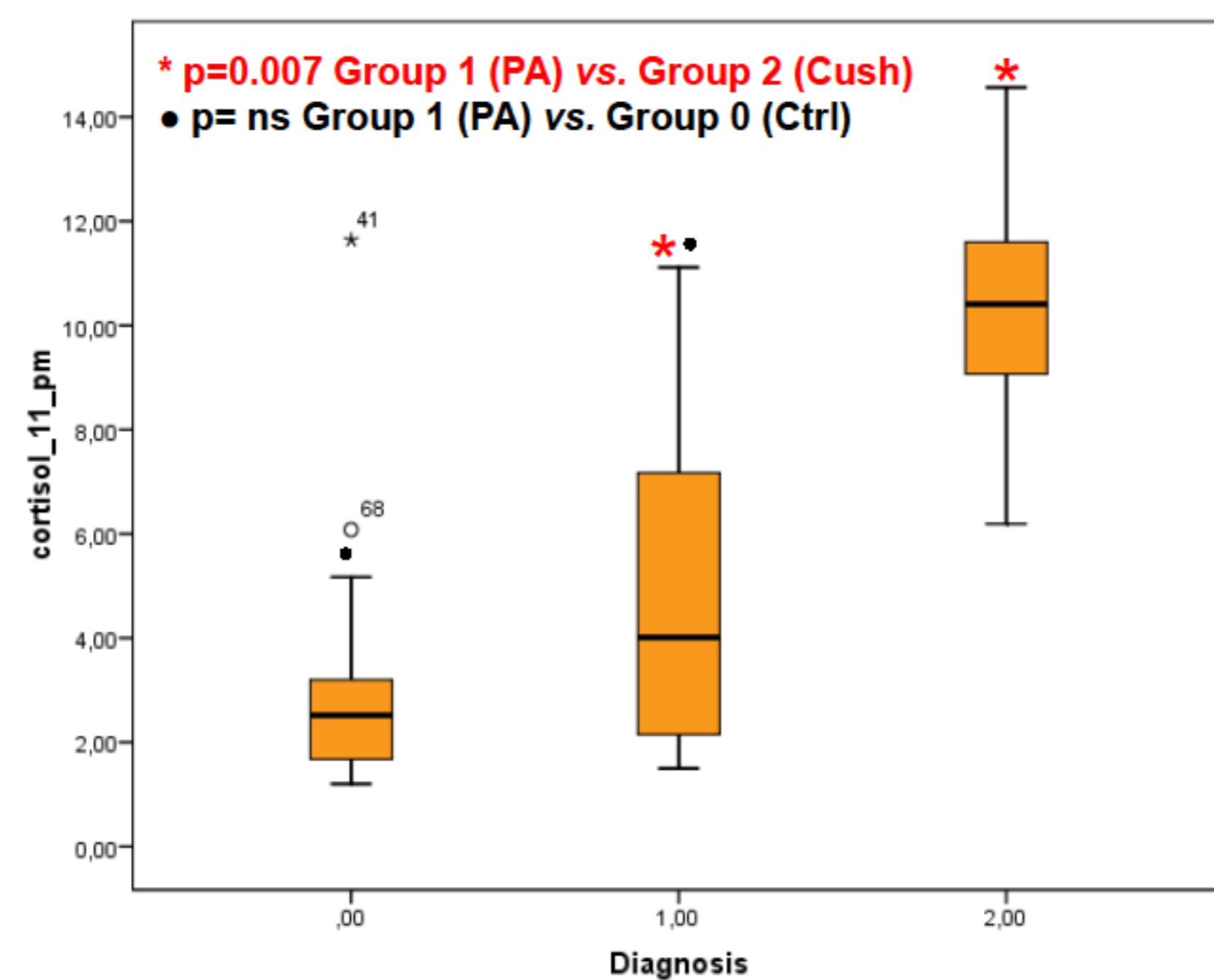
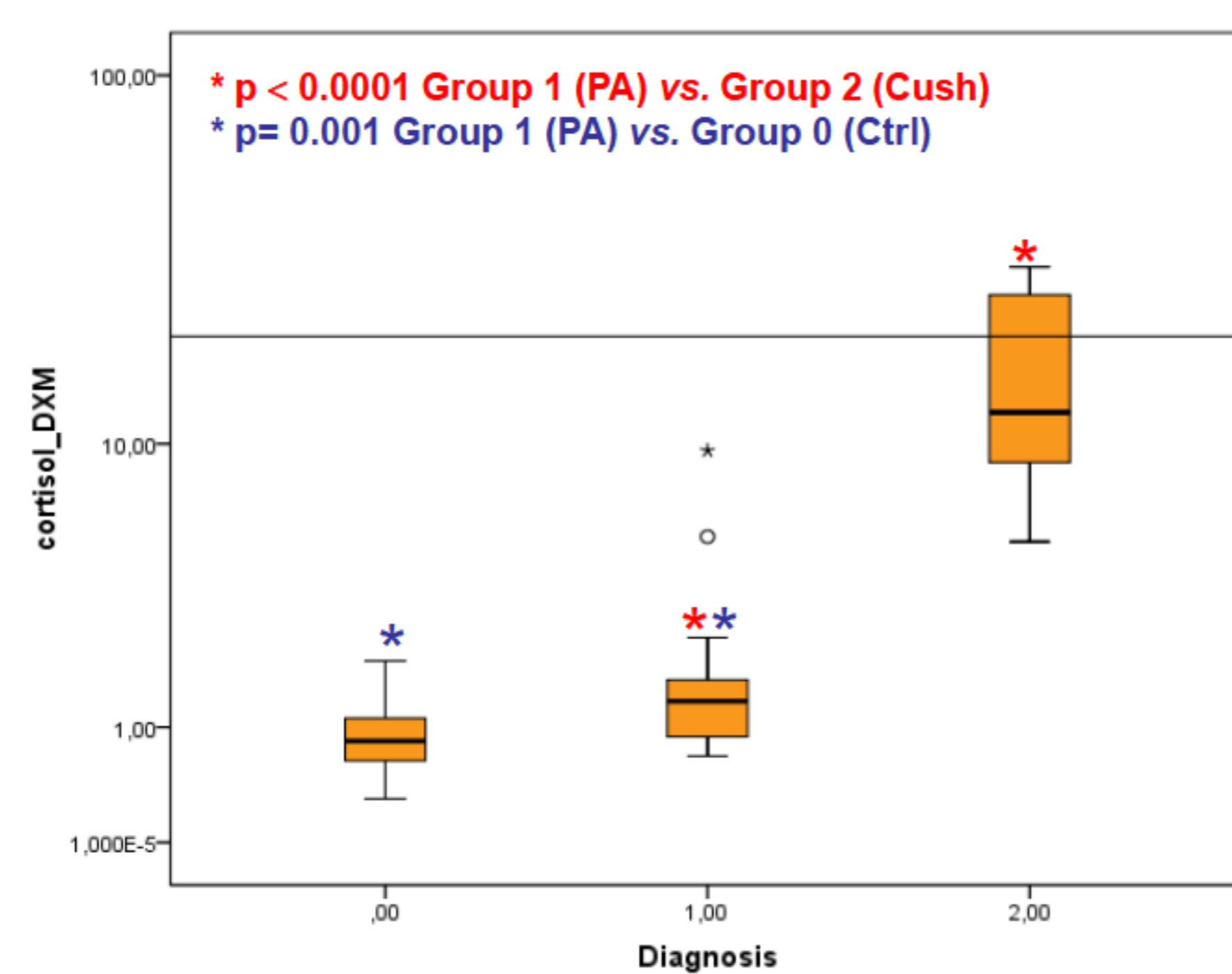


Figure 2. Serum 8 a.m. cortisol levels after 1 mg DXM overnight



BMI, maximum systolic blood pressure, fasting glycaemia and total cholesterol were similar in the three groups.

Serum kalemia in patients with PA (2.6±0.5 mmol/l) was significantly lower than in patients with ACTH independent Cushing syndrome (4.3±0.9 mmol/l, p<0.0001) and in control patients (4.4±0.4 mmol/l, p<0.0001).

ACTH levels were similar in PA patients and in control group.

One operated patient with PA developed postoperative adrenal insufficiency and required glucocorticoid replacement therapy.

*DXM- Dexamethasone

CONCLUSIONS

Mild cortisol excess may co-exist in primary aldosteronism patients, reflected by higher cortisol levels after overnight low-dose dexamethasone test.

References

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- ² Furuta N, Naruoka T, Igarashi T et al. *Hinyokika Kyo* 2015; 61(5):185-90.

